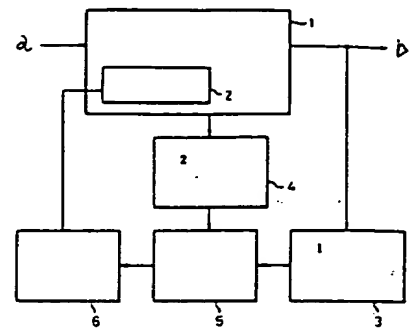


(54) MAGNETIC RECORDING AND REPRODUCING CIRCUIT

(11) 2-23573 (A) (43) 25.1.1990 (19) JP
 (21) Appl. No. 63-170876 (22) 11.7.1988
 (71) FUJITSU LTD (72) TAKAO SUGAWARA(4)
 (51) Int. Cl.³ G11B20/10

PURPOSE: To improve the reliability of the title circuit with a simple circuit configuration by adding a prescribed circuit to a viterbi decoder processing binary signals so that the decode can process ternary signals also.

CONSTITUTION: Peak number detection circuits 3 and 4 respectively count numbers of peak level signals while a viterbi decoder 1 outputs and passes and a positive/negative discrimination circuit 5 discriminates the positive and negative of reproduced signals based on the odd and even of the peak level signals. A changeover switch 2 for switching the positive and negative of waveform interference quantity in the decoder 1 is switched through a changeover switch drive circuit 6 in accordance with a discriminated result of the circuit 5. Since ternary reproduced signals from a magnetic recording medium can be processed as binary signals when the output of the decoder 1 is counted in such way, the number of passes to be compared can be reduced and highly reliable decoding can be performed with a simple circuit.



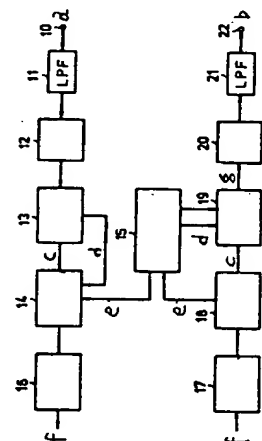
a: reproduced signal, b: output

(54) SOUND DATA RECORDING AND REPRODUCING DEVICE

(11) 2-23574 (A) (43) 25.1.1990 (19) JP
 (21) Appl. No. 63-172299 (22) 11.7.1988
 (71) VICTOR CO OF JAPAN LTD (72) YASUO INOUE
 (51) Int. Cl.³ G11B20/10

PURPOSE: To reduce quantized noises so as to improve the quality of sound data by recording analog sound signals in different areas of the track of a magnetic tape after converting the signals into sound data having (n) bits of quantized bits and dividing the quantized bits into higher-rank (m) bits and lower-rank (n-m) bits and coupling and D/A converting the sound data at the time of reproduction.

CONSTITUTION: Analog sound signals at an input terminal 10 are quantized to 18 bits quantized bits by means of an 18-bit A/D converter 12. Then each 18 bits are separated into higher-rank 16 bits and lower-rank 2 bits by means of a data separation circuit 13 and the higher-rank 16 bits are supplied as sound data to an encoding circuit 14. The lower-rank 2 bits are also supplied to the circuit 14 as sub-code data together with sub-code signals from a CPU. The circuit 14 records these data in the sound data and sub-code areas of a magnetic tape as one block through a modulator circuit 16. At the time of reproduction, the higher- and lower-rank bits are coupled together by means of a data coupling circuit 19 after the bits are respectively decoded and outputted as 18 bits after D/A conversion. Therefore, quantization noises are reduced.



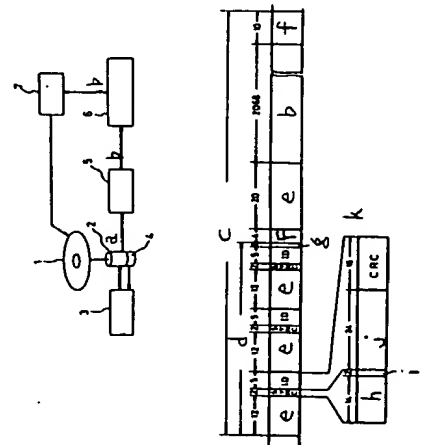
17: demodulator circuit, 18: decoding circuit, 20: 18-bit D/A converter, a: sound input, b: sound output, c: higher-rank 16 bits, d: lower-rank 2 bits, e: sub-data, etc., f: head, g: 18 bits

(54) DATA RECORDING AND REPRODUCING DEVICE

(11) 2-23576 (A) (43) 25.1.1990 (19) JP
 (21) Appl. No. 63-174487 (22) 12.7.1988
 (71) MITSUBISHI ELECTRIC CORP (72) KIYOSHI MATSUTANI(2)
 (51) Int. Cl.³ G11B20/12, G11B27/10, G11B27/28

PURPOSE: To reduce the fruitless use of a recording area by writing synchronizing signals and address information in an n-time superposed state at every pre-format section and at the same time, additionally recording number information indicating the order of the synchronizing signals in the same pre-format section.

CONSTITUTION: The rotation of a disk 1 is controlled by a control section 3 and clocks from a rotation detecting section 4 indicating the rotating state of the disk 1 are counted by means of a counter 5. The data of the counter 5 are sent to a pre-formatter 6 and the pre-formatter 6 produces synchronizing signals SYNC and identification code ID (n) times and at the same time, outputs the number of synchronizing signal writing times to a modulator 7 when the pre-formatter 6 produces pre-format data based on the data of the counter 5. Then the pre-format data are modulated by a prescribed modulation system and stored on the disk. Therefore, the position of recording and reproduced data is accurately found from the synchronizing signals SYNC and fruitless use of a data recording area can be reduced.



a: clock, b: data, c: sector (2160), d: pre-format, e: preamble, f: gap, g: post-ambly, h: synchronizing pattern, i: number, j: address, k: (unit: bit)